



Norman H. Bangerter  
Governor

Dee C. Hansen  
Executive Director

Dianne R. Nielson, Ph.D.  
Division Director

# State of Utah

DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF OIL, GAS AND MINING

355 West North Temple  
3 Triad Center, Suite 350  
Salt Lake City, Utah 84180-1203  
801-538-5340

April 6, 1992

TO: Board of Oil, Gas and Mining

THRU: Lowell P. Braxton, Associate Director *LPB*

FROM: D. Wayne Hedberg, Permit Supervisor *DWH*

RE: Request for Board Approval, Amount and Form of Reclamation Surety, Kennecott Utah Copper, Pine Canyon/Carr Fork Mine, M/045/004, Tooele County, Utah

The Division is seeking the Board's concurrence and approval of the amount and form of reclamation surety proposed by Kennecott Utah Copper (KUC) for their Pine Canyon mine property. This property is part of what was Anaconda Minerals Company's Carr Fork mine. Kennecott purchased the mine, mill site and ore reserves from Anaconda Minerals Company in September 1985. No mining has been conducted since Anaconda closed the Carr Fork mine. Kennecott has no immediate plans to reactivate the mine and is presently maintaining the remaining mine facilities under an indefinite period of suspension.

The Pine Canyon property was originally comprised of 130 acres of surface disturbance. In 1988-89, KUC reclaimed all but approximately 17 acres of the Pine Canyon/Carr Fork mine property under an approved *interim* reclamation plan. On October 24, 1989, the Division issued tentative approval to KUC for their proposed *final* reclamation plan which addresses the remaining mine facilities and associated surface disturbances. Of the remaining 17 acres, approximately 10 will have a commercial post-mining landuse. The other 7 will ultimately be reclaimed by KUC.

A \$82,400 (1997 dollars) surety estimate has been calculated by the Division to reclaim the residual (7 acre) disturbance associated with this mine property. Kennecott has provided the Division with a completed Reclamation Contract (FORM MR-RC) and a \$82,400 reclamation surety, from First Security Bank of Utah, in the form of an Irrevocable Standby Letter of Credit (#S-06516-00166).

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Board Memorandum  
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Please find the following items attached for your evaluation:

1. Summary Checklist
2. General Location Map
3. Executive Summary
4. Reclamation Cost Estimate
5. Reclamation Contract
6. Reclamation Surety - ILOC

Thank you for your time and consideration of this permitting request.

jb  
Attachments  
M045004

**DOGM MINERALS PROGRAM**

Checklist for Board Approval  
of  
**FORM AND AMOUNT OF SURETY**

Prepared April 7, 1992

Mine Name Pine Canyon/Carr Fork  
File No. M/045/004

Items	Provided		Remarks
	Yes	No	
Executive Summary	X		
Location Map	X		
Reclamation Bond Estimate	X		
Signed Reclamation Contract	X		
Signed Power of Attorney/ Affidavit of Qualification		X	N/A
Bond/Reclamation Surety	X		ILOC
Surety Sign Off (Other State/Federal Agencies)		X	N/A

4: Checklist



## EXECUTIVE SUMMARY

Last Revision April 6, 1992

<b>Mine Name:</b> <u>Pine Canyon/Carr Fork Mine</u>	<b>I.D. No:</b> <u>M/045/004</u>
<b>Operator:</b> <u>Kennecott Utah Copper</u>	<b>County:</b> <u>Tooele</u>
<u>P. O. Box 525</u>	<b>New/Existing:</b> <u>Existing</u>
<u>Bingham Canyon, Utah 84006-0525</u>	<b>Mineral Ownership:</b> <u>Private (Patented)</u>
	<b>Surface Ownership:</b> <u>Private (Patented)</u>
<b>Telephone:</b> <u>(801) 569-6000</u>	<b>Lease No.(s):</b> <u>N/A</u>
<b>Contact Person:</b> <u>Roderick K. Davey</u>	<b>Permit Term:</b> <u>N/A</u>

**Life of Mine:** Undetermined. Mining is suspended for an unspecified timeframe.

**Legal Description:** S1/2 SW1/4, Section 17; N1/2, Section 20; W1/2 NE1/4, Section 20; SE1/4 NE1/4, Section 20; E1/2 SE1/4, Section 20; SW1/4 SW1/4, Section 21; W1/2 NW1/4, Section 28; NE1/4 NE1/4, Section 29; T3S, R3W, SLBM

**Mineral(s) to be Mined:** Copper

**Mining Methods:** Underground; Blasthole; Room and Pillar

**Disturbed Acres :** 130.5 (original disturbance), majority reclaimed fall/88 & spring/89, 17.3 acres remain unreclaimed. Approximately 7 acres of this total, will not have a commercial post-mining landuse, and will be reclaimed upon final reclamation.

**Present Land Use:** Mining (suspended), commercial (trucking), water supply development

**Postmining Land Use:** Wildlife habitat, commercial, water supply development

**Variance Requests Granted (Rule R647-4-112):** R647-4-111.8, R647-4-111.9, R647-4-111.11, & R647-4-111.13 {Rule M10(12)}.

### Soils and Geology:

**Soil Description:** Relatively shallow and poorly developed soils, Yeates Hollow gravelly loam is the general soil series within the permit area. Significant evidence of historic landslide & debris flows (Bradshaw-Agassiz association) resulting from unstable steep slopes in the upper Pine Canyon watershed area & its lower side canyon tributaries.

**pH:** soils average 8.3, range 7.9 - 8.6

**Special Handling Problems:** low organic matter, clay, phosphorus and nitrogen levels in coarser soils. Will be supplemented with soil amendments upon reclamation.



**Geology Description:** The ore is a skarn formed in two limestone units enclosed by quartzites, all of which are Pennsylvanian in age. The ore is hard and tough, while the waste rock is hard, brittle and fractured.

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### **Hydrology:**

**Ground Water Description:** De-watering of the Carr Fork mine ceased in 1985. Mine workings were allowed to flood. Water levels in the Carr Fork production shaft in Pine Canyon and in the Carr Fork exhaust shaft on the east side of the Oquirrh Mountains near the Bingham Canyon mine pit have risen uniformly (due to lateral interconnections) since mine dewatering ceased. The flooding has slowed and water levels appear to be stabilizing. Groundwater quality records from area wells, tunnel discharges and from the production shaft indicate no ground water quality problems. Water quality is good.

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**Surface Water Description:** Pine Creek is basically an intermittent stream comprising the main drainage through Pine Canyon. A portion of the channel was man-made due to the location of past mining-related facilities/activities. The present channel is not largely man-made due to 1984 flooding which destroyed most of the constructed channel reaches. Flows since then have produced channel morphologies which are indicative of the natural channel conditions. Hydrologic channel reclamation performed during 1988-89 by KUC focused upon a design which accommodated the present channel morphology to the extent possible. Any final reclamation-related impacts to the Pine Creek drainage will be designed to continue this practice and support the post-mining land uses.

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**Water Monitoring Plan:** Surface and groundwater quality has been monitored during and following mining operations and will continue according to plans approved by the Division as part of the reclamation plan.

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### **Ecology:**

**Vegetation Type(s); Dominant Species:** gambel oak, bigtooth maple, boxelder, elderberry, Canadian goldenrod, gum weed, sunflowers, mulesear dock, showy milkweed, mountain brome, squirrel tail bottlebrush, blue wildrye, prickly lettuce, intermediate wheatgrass, tall wheatgrass, rabbitbrush, herbaceous Aster.

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**Percent Surrounding Vegetative Cover:** varies from 8 - 36 percent, range condition fair to poor.

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**Wildlife Concerns:** Reclamation activities will enhance wildlife use of area.

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**Existing Pine Canyon Surface Facilities:** Pine Canyon Tunnel Portal, concrete flume for tunnel discharge, concrete production shaft headframe, warehouse fence, main access road, Big Springs road, Big Springs dam, power lines, concrete box, railroad tracks, warehouse and shops, power & telephone poles, mill flume, water tank concrete flume near Big Springs, water well sites (4).

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**Mining and Reclamation Plan Summary:** At the present time, no mining is planned by KUC for this area.

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**Reclamation Plan Summary:** *It is KUC's intention to reclaim at such time as it is determined that the remaining canyon facilities will no longer have any potential use in future exploitation of mineral deposits in the western part of the Bingham Canyon mining district. Until that time the remaining facilities will be maintained in their current condition.*

- Facilities not necessary for future, non-mining uses will be salvaged, demolished, backfilled and/or buried. Exclusions include: the production shaft headframe, warehouse/truckshop, warehouse fence, access road, culinary water system, fresh water tank, water tank road, water wells and their power line.
- The Pine Canyon Tunnel will be sealed by backfilling. Any remaining ore will be regraded, covered with at least 12 inches of topsoil substitute and revegetated. Other remaining disturbed areas will be regraded/recontoured, disced or ripped, amended appropriately and reseeded.
- Drainage will be piped from the Pine Canyon Tunnel and routed back into the main drainage channel. Appropriate long-term channel erosion protection will be provided to handle this discharge.
- The waste rock dump adjacent to the production shaft pad, will not be reclaimed due to a variance.
- All roads besides the main access road and water tank road, will be scarified, water barred and revegetated.

**Surety:**

**Amount:** \$82,400 (1997 dollars)

**Form:** Letter of Credit

**Renewable Term:** 5 years

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M045004



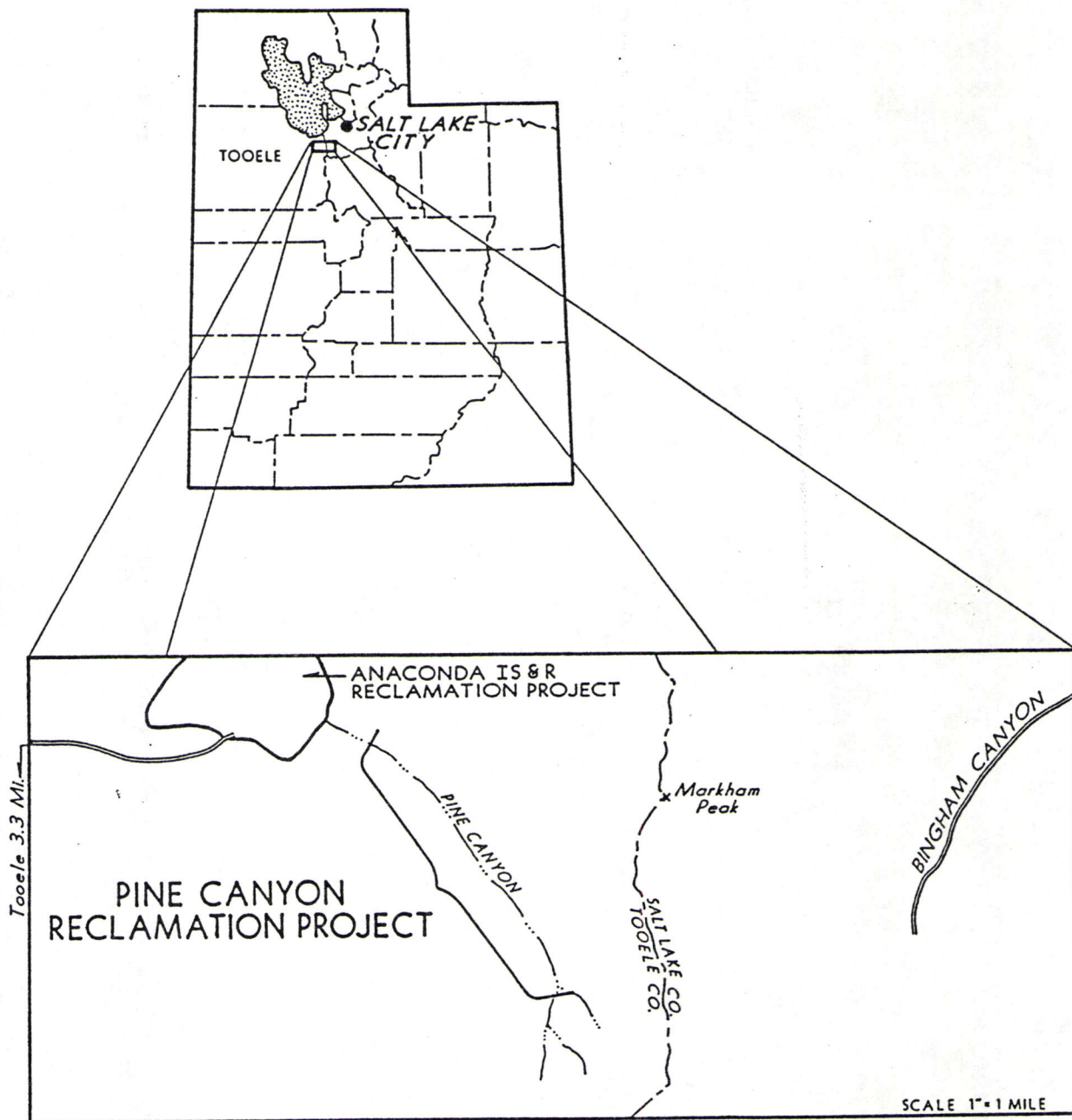


FIGURE 1.1-1 LOCATION MAP

**Reclamation Estimate****Kennecott Utah Copper****(Revised 3/17/92)****Pine Canyon Mine Tooele County****M/045/004****Prepared by Utah State Division of Oil, Gas & Mining**

<u>Description</u>	<u>Quantity</u>	<u>Unit</u>	<u>\$/Unit</u>	<u>Cost(\$)</u>
Flume Removal	10,210	LF	2.00	20,420
Waste Rock Removal	500	CY	5.00	2,500
Power Pole Demolition	30	pole	180.00	5,400
Railroad Track Demolition	500	ft	13.80	6,900
Construct Retention Berms	2,892	CY	1.31	3,789
Construct Portal Bulkhead	18	LF	105.00	1,890
Backfill Portal	595	CY	3.16	1,880
Concrete Box Demolition	256	SF	13.20	3,379
Cover Ripped Pad Area w/12" Topsoil	200	CY	3.16	632
Headframe Openings & Hardware	-----	-----	sum	4,000
Scarify the Area	6.5	acre	120.00	780
Apply Fertilizer	6.5	acre	700.00	4,550
Seed the Area	6.5	acre	490.00	3,185
Apply Mulch	6.5	acre	870.00	5,655
Apply Urea	6.5	acre	290.00	1,885
Riprap	22	CY	44.00	968
Monitor the Area for 3 Years	12	day	160.00	1,920
Miscellaneous Projects Not Listed	-----	-----	sum	600
SUBTOTAL				70,333
+10% CONTINGENCY				7,033
SUBTOTAL				77,366
ESCALATION (1.27% FOR 5 YRS)				5,039
TOTAL				82,405
ROUNDED TOTAL (1997-\$)				82,400

**Miscellaneous Projects Not Listed***Flume backfill**Demolition of boxes & pipe along flume**Construction of tunnel discharge channel**Ripping pad area near portal**Constructing asphalt water bar**Crimping the applied mulch**Erosion control mats for berm spillways*